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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,939	06/27/2003	Jeffrey Socha	663P001	8662
42754 7590 02/09/2007 NIELDS & LEMACK 176 EAST MAIN STREET, SUITE 7 WESTBORO, MA 01581			EXAMINER YOO, REGINA M	
			ART UNIT	PAPER NUMBER
			1744	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/607,939	Applicant(s) SOCHA, JEFFREY	
	Examiner Regina Yoo	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 1/16/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 21-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/15/2003</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-20 in the reply filed on January 16, 2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 21-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group II, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on January 16, 2007.

Claim Objections

3. Claim 8 is objected to because of the following informalities: last limitation of Claim 8 should be labeled "d" instead of "c". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claim 5 recites the limitation "said output". There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to "said outlet".

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6. Claim 15 recites the limitation "the output". There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to "the outlet".

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 5-6, 8-9, 11-12, 15 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Sweetman (5063030).

As to Claim 1, Sweetman ('030) discloses an apparatus (A) for treating contaminants in a fluid, comprising a housing (64) having an inlet (40) for said contaminated fluid, an ozone chamber (16) in fluid communication with said inlet and in which said contaminated fluid is mixed with ozone, an ozone destruction chamber (20) in fluid communication with said ozone chamber and in which the concentration of ozone in said mix is reduced, and an outlet (46, 48) for the flow of decontaminated fluid.

As to Claim 2, Sweetman ('030) discloses an apparatus (A) wherein said ozone destruction chamber (20) comprises a catalyst effective for converting ozone to diatomic and atomic oxygen (Col. 6, lines 52-54).

As to Claim 5, Sweetman ('030) discloses an apparatus (A) further comprised of at least one sensor (60, 52) for detecting the concentration of ozone at said output (48, 74, 76) of said apparatus (A).

As to Claim 6, Sweetman ('030) discloses an apparatus (A) further comprised of a source of ozone (18) in communication with said ozone chamber (16) and a controller (Col. 6, line 61-62) responsive to said sensor (60) for terminating the flow of ozone from said source of ozone (18) when said sensor detects an ozone concentration above a predetermined level (Col. 6, lines 60-64).

As to Claim 8, Sweetman ('030) discloses a decontamination apparatus (A) for destroying airborne organic contaminants, comprising:

- a. an inlet (24, 40) adapted to receive and draw inlet air (B) into said apparatus (A),
- b. an ozone gas introduction system (18, 72, 74, 76), adapted to infuse ozone gas into said inlet air (B) in said apparatus (A),
- c. a first mixing chamber (16) wherein said ozone gas and said inlet air (B) combine, and
- d. a second mixing chamber (20) where the concentration of said ozone in said combined ozone and air is reduced.

As to Claim 9, Sweetman ('030) discloses a decontamination apparatus (A) wherein a sufficient and measurable amount of ozone is infused so as to effectively decontaminate said inlet air (B) (Col. 5, lines 54-59 and Col. 6, lines 23-31).

As to Claim 11, Sweetman ('030) discloses a decontamination apparatus (A) wherein said ozone and said inlet air remain in said first mixing chamber for a sufficient, and measurable residence time so as to effectively decontaminate said inlet air (Col. 4, lines 50-55).

As to Claim 12, Sweetman ('030) discloses a decontamination apparatus (A) wherein said concentration of ozone is reduced via a catalyst, said catalyst capable of reducing ozone into diatomic and atomic oxygen (Col. 6, lines 52-54).

As to Claim 15, Sweetman ('030) discloses a decontamination apparatus (A) further comprised of at least one sensor (60) capable of detecting ozone at the output (48) of said apparatus (A), wherein said ozone injection system (18) is disabled if said at least one sensor (60) measures an ozone level above a predetermined level (Col. 6, lines 60-64).

As to Claim 19, Sweetman ('030) discloses a decontamination apparatus (A) further comprised of air drawing means (26) to direct air into said inlet (24, 40).

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9. Claims 1-5, 8-9 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiromi (5681533).

As to Claim 1, Hiromi ('533) discloses an apparatus (Figure 1; Abstract) for treating contaminants in a fluid, comprising a housing (Abstract) having an inlet (see Figure 1) for said contaminated fluid, an ozone chamber (6, 7) in fluid communication with said inlet and in which said contaminated fluid is mixed with ozone, an ozone destruction chamber (8) in fluid communication with said ozone chamber (6, 7) and in which the concentration of ozone in said mix is reduced (Col. 3, lines 45-47), and an outlet (see Figure 1) for the flow of decontaminated fluid.

As to Claim 2, Hiromi ('533) discloses an apparatus (Figure 1; Abstract) wherein said ozone destruction chamber (8) comprises a catalyst (8) effective for converting ozone to diatomic and atomic oxygen (Col. 3, lines 44-47; Col. 4, lines 54-55).

As to Claim 3, Hiromi ('533) discloses an apparatus (Figure 1; Abstract) further comprised of a filter (1, 3) in said housing (Abstract).

As to Claim 4, Hiromi ('533) discloses an apparatus (Figure 1; Abstract) wherein the concentration of ozone is reduced to 0.1 ppm or less (Col. 4, lines 51-53 and Col. 8, lines 41-44).

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As to Claim 5, Hiromi ('533) discloses an apparatus (Figure 1; Abstract) further comprised of at least one sensor (11) for detecting the concentration of ozone at said output (Figure 1) of said apparatus.

As to Claim 8, Hiromi ('533) discloses a decontamination apparatus (Figure 1; Abstract) for destroying airborne organic contaminants (see Table 1), comprising:

- a. an inlet (Figure 1, Abstract) adapted to receive and draw inlet air into said apparatus,
- b. an ozone gas introduction system (6), adapted to infuse ozone gas into said inlet air in said apparatus,
- c. a first mixing chamber (7) wherein said ozone gas and said inlet air combine, and
- d. a second mixing chamber (8) where the concentration of said ozone in said combined ozone and air is reduced.

As to Claim 9, Hiromi ('533) discloses a decontamination apparatus (Figure 1; Abstract) wherein a sufficient and measurable amount of ozone is infused so as to effectively decontaminate said inlet air (Col. 4, lines 39-46).

As to Claim 12, Hiromi ('533) discloses a decontamination apparatus (Figure 1; Abstract) wherein said concentration of ozone is reduced via a catalyst (8), said catalyst

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capable of reducing ozone into diatomic and atomic oxygen (Col. 3, lines 44-47; Col. 4, lines 54-55).

As to Claims 13-14, Hiromi ('533) discloses a decontamination apparatus (Figure 1; Abstract) wherein said catalyst (8) reduces concentration of said ozone to below a predetermined level of 0.1 ppm (Col. 4, lines 51-53 and Col. 8, lines 41-44).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sweetman (5063030).

Sweetman ('030) discloses an apparatus (A) further comprising a filter (12).

While Sweetman does not specifically state that the filter is within the housing (64), it

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was well known in the art at the time of the invention that a filter as well as all members of the decontamination apparatus to be within the housing of such decontamination apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention to expand the housing (64) to incorporate the filter and the other units within the housing in order to isolate the entire apparatus.

13. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sweetman (5063030) or Hiromi (5681533) in view of Katatani (5492676).

Sweetman ('030) or Hiromi ('533) is relied upon for disclosure described in the rejection of claim 1 under 35 U.S.C. 102(b).

Sweetman ('030) and Hiromi ('533) fail to specifically teach that an apparatus for treating contaminants in a fluid is further comprised of an anemometer for measuring the volume of an incoming fluid, and a controller responsive to said anemometer for controlling the amount of ozone in said ozone chamber.

Katatani ('676) discloses that an apparatus for treating contaminants in a fluid (Figure 1) is further comprised of an anemometer (21) for measuring the volume of an fluid coming into the system, and a controller (61) responsive to said anemometer (21) for controlling the amount of ozone in said ozone chamber (Figure 10).

It was well known in the art at the time of invention to use an anemometer and an associated controller to measure the air volume coming through a decontamination apparatus. It would have been obvious to one of ordinary skill in the art at the time of invention to provide an anemometer and a controller in the decontamination device of

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Sweetman ('030) or Hiromi ('533) in order to obtain a "feedforward control" for the ozonizer in determining/providing "a base oxidation amount immediately" necessary for decontamination ('676, Col. 10, lines 6-7 and 18-19) as shown by Katatani ('676).

Thus, Claim 7 would have been would have been would have been obvious within the meaning of 35 U.S.C. 103(a) over the combined teachings of Sweetman ('030) or Hiromi ('533) and Katatani ('676).

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sweetman (5063030) or Hiromi (5681533) in view of Kowalski et al. (Ozone Sci & Engineering 0191-9512/98).

Sweetman ('030) or Hiromi ('533) is relied upon for disclosure described in the rejection of claim 9 under 35 U.S.C. 102(b).

Sweetman ('030) and Hiromi ('533) fail to teach that a sufficient amount of ozone to be infused to effectively decontaminate air is in excess of 100 ppm.

Kowalski et al. (Ozone Sci & Engineering 0191-9512/98) discloses that amount of ozone used for decontaminating air is in excess of 100 ppm (page 1, Abstract).

It was well known in the art at the time of invention to use various amounts of ozone to effect decontamination. It would have been obvious to one of ordinary skill in the art at the time of invention to provide the ozone amount in excess of 100 ppm in the decontamination device of Sweetman ('030) or Hiromi ('533) in order to obtain a complete/thorough decontamination (Kowalski et al., Abstract) as shown by Kowalski.

Thus, Claim 10 would have been obvious within the meaning of 35 U.S.C. 103(a) over the combined teachings of Sweetman ('030) or Hiromi ('533) and Kowalski et al. (Ozone Sci & Engineering 0191-9512/98).

15. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sweetman (5063030) or Hiromi (5681533) in view of Katatani (5492676).

Sweetman ('030) or Hiromi ('533) is relied upon for disclosure described in the rejection of claim 8 under 35 U.S.C. 102(b).

Sweetman ('030) and Hiromi ('533) fail to specifically teach that a decontamination apparatus for destroying airborne organic contaminants is further comprised of means to measure the volume of an incoming fluid, wherein the amount of infused ozone is responsive to the measured volume.

Katatani ('676) discloses that an apparatus for treating contaminants in a fluid (Figure 1) is further comprised of an anemometer (21) for measuring the volume of an fluid coming into the system, and a controller (61) responsive to said anemometer (21) for controlling the amount of ozone in said ozone chamber (Figure 10).

It was well known in the art at the time of invention to use an anemometer and an associated controller to measure the air volume coming through a decontamination apparatus. It would have been obvious to one of ordinary skill in the art at the time of invention to provide an anemometer and a controller in the decontamination device of Sweetman ('030) or Hiromi ('533) in order to obtain a "feedforward control" for the

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ozonizer in determining/providing "a base oxidation amount immediately" necessary for decontamination ('676, Col. 10, lines 6-7 and 18-19) as shown by Katatani.

Thus, Claim 16 would have been obvious within the meaning of 35 U.S.C. 103(a) over the combined teachings of Sweetman ('030) or Hiromi ('533) and Katatani ('676).

16. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sweetman (5063030) or Hiromi (5681533) in view of Rin (JP 2002-362906).

Sweetman ('030) or Hiromi ('533) is relied upon for disclosure described in the rejection of claim 8 under 35 U.S.C. 102(b).

Sweetman ('030) and Hiromi ('533) fail to teach that a decontamination apparatus for destroying contaminants is further comprised of means for producing sonic or ultrasonic waves, wherein said waves facilitate the separation of said contaminants, and it is located within a first mixing chamber.

Rin ('906) discloses that a decontamination apparatus for destroying contaminants is further comprised of means for producing sonic or ultrasonic waves (6), and it is located within a first mixing chamber (A in Figure 5; 1 in Figure 6).

It was well known in the art at the time of invention to include means to produce ultrasonic waves within a decontamination device. It would have been obvious to one of ordinary skill in the art at the time of invention to provide means to produce ultrasonic waves in the decontamination device of Sweetman or Hiromi in order to effectively

"[perform] the sterilization, odor removal" (English translation, paragraph [0005], last line) as shown by Rin.

Thus, Claims 17-18 would have been obvious within the meaning of 35 U.S.C. 103(a) over the combined teachings of Sweetman ('030) or Hiromi ('533) and Rin ('906).

17. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sweetman (5063030) or Hiromi (5681533) in view of Masuda (JP 63-292961).

Sweetman ('030) or Hiromi ('533) is relied upon for disclosure described in the rejection of claim 8 under 35 U.S.C. 102(b).

Sweetman ('030) and Hiromi ('533) fail to teach that a decontamination apparatus for destroying contaminants is further comprised of a loopback mechanism, said mechanism allowing treated air exiting said second mixing chamber to be directed to said inlet to be further treated.

Masuda ('961) discloses that a decontamination apparatus for destroying contaminants (Figure 1) is further comprised of a loopback mechanism (English translation of Abstract). While Masuda in the Abstract does not specifically disclose that the loopback mechanism directs treated air exiting said second mixing chamber (5) to be directed to said inlet (2b) to be further treated, Drawing 1 indicates that the treated air leaving the second mixing chamber (5) and an ozone monitor (15) is looped back through a branching conduit after the ozone monitor (15) which connects to conduits after valve (3b) and before pump (17) into the inlet (2b).

It was well known in the art at the time of invention to provide a loopback mechanism within a decontamination apparatus. It would have been obvious to one of ordinary skill in this art at the time of invention to provide a loopback mechanism in the decontamination device of Sweetman or Hiromi in order for used air to "again [receive] ozonizing action ...to be recirculated to the sterilizing chamber" ('961, Abstract) as shown by Masuda.

Thus, Claim 20 would have been obvious within the meaning of 35 U.S.C. 103(a) over the combined teachings of Sweetman ('030) or Hiromi ('533) and Masuda ('961).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Yoo whose telephone number is 571-272-6690. The examiner can normally be reached on Monday-Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Piazza Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RY



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